

Mineral Industry Surveys

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VANADIUM IN MARCH 2006

Reported domestic consumption of vanadium in March 2006 was about the same as that of the previous month, and was about 9% less than that of March 2005, according to the U.S. Geological Survey. Consumer stocks of vanadium, in all forms, were 361 metric tons (t) at the beginning of 2006 and 379 t at the end of March.

According to Ryan's Notes (2006), U.S. ferrovanadium (FeV) prices ranged from \$18.778 to \$19.389 per pound of vanadium content in March, as compared with \$19.625 to \$20.188 in February. European FeV prices ranged from \$39.333 to \$41.222 per kilogram in March, as compared with \$44.875 to \$46.750 in February. Vanadium pentoxide (V_2O_5) prices ranged from \$8.517 to \$8.833 per pound in March, as compared with \$8.688 to \$9.250 in February.

Several potential bidders began due diligence procedures in seeking to acquire South Africa's second largest steel producer, Highveld Steel and Vanadium. Anglo American Plc., Highveld's parent company, was expected to sell 79% interest in the company as part of its ongoing restructuring. Interested parties included Mittal Steel Co. (Netherlands), Tata Steel Ltd. (India), Xstrata Plc. (Switzerland), and the Kermas Group (United Kingdom). Interest in Highveld was high owing to

historically high FeV prices that resulted in strong profits in 2004 and 2005 (Metal Bulletin Research, 2006).

In another vanadium industry development, Australian base metals company Vulcan Resources Ltd. acquired a major vanadium deposit (Syote) and a number of prospects in north central Finland. The site covered about 213 square kilometers and included the former Otanmaki iron-vanadium mine. Geologic records, coupled with past production information, indicated the potential for a massive deposit. Vulcan planned further studies to delineate the potential of the Syote deposit, about 15 kilometers from the Mustavaare Mine, which produced about 10% of the world's vanadium from the 1950s to the 1980s (Platts Metals Week, 2006).

References Cited

- Metal Bulletin Research, 2006, Vanadium highlights—Bidders for Highveld start due diligence: Metal Bulletin Research, Ferro-alloys Monthly, no. 163, March 16, p. 15.
Platts Metals Week, 2006, Vulcan acquires Finnish vanadium project: Platts Metals Week, v. 77, no. 10, March 6, p. 13.
Ryan's Notes, 2006, [untitled]: Ryan's Notes, v. 12, no. 14, April 3, p. 10.

TABLE 1
U.S. CONSUMPTION AND CONSUMER STOCKS OF VANADIUM, BY FORM¹

(Kilograms, contained vanadium)

	2005 ^p		2006			
			February		March	
	Consumption	Stocks	Consumption	Stocks	Consumption	Stocks
Ferrovandium ²	3,430,000	335,000	280,000 ^r	335,000 ^r	283,000	353,000
Vanadium-aluminum alloy	W	W	W	W	W	W
Other ³	260,000	25,700	24,600 ^r	28,500 ^r	23,700	25,500
Total	3,690,000	361,000	305,000 ^r	364,000 ^r	307,000	379,000

^pPreliminary. ^rRevised. W Withheld to avoid disclosing company proprietary data; included with "Other."

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes other vanadium-iron-carbon alloys as well as vanadium oxides added directly to steel.

³Includes other vanadium alloys, vanadium metal, vanadium pentoxide, vanadates, chlorides, other specialty chemicals, and items indicated by symbol W.

TABLE 2
U.S. CONSUMPTION OF VANADIUM, BY END USE¹

(Kilograms, contained vanadium)

	2005 ^p	2006		
		February	March	Year to date
Steel:				
Carbon	902,000	78,700 ^r	82,800	226,000
High-strength low-alloy	1,060,000	83,600 ^r	86,600	253,000
Stainless and heat-resisting	59,900	5,080	5,080	15,200
Full alloy	1,000,000	86,600	89,400	266,000
Tool	401,000	25,900	19,300	68,300
Total steel	3,430,000	280,000	283,000	829,000
Superalloys	9,610	343 ^r	352	1,340
Miscellaneous and unspecified ²	253,000	24,400 ^r	23,500	68,600
Total consumption	3,690,000	305,000 ^r	307,000	899,000

^pPreliminary. ^rRevised.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes cast irons, alloys excluding steel and superalloys, chemical and ceramic uses, and other miscellaneous and unspecified uses.

TABLE 3
U.S. IMPORTS AND EXPORTS OF ALUMINUM-VANADIUM MASTER ALLOY AND
VANADIUM METAL, INCLUDING WASTE AND SCRAP¹

(Kilograms, gross weight)

	Aluminum-vanadium master alloy		Vanadium metal, including waste and scrap	
	Quantity	Value	Quantity	Value
Imports for consumption:				
2005	1,010	\$15,500	54,800	\$3,800,000
2006:				
January	--	--	1,240	144,000
February:				
Germany	--	--	454	36,200
Russia	--	--	3,090	426,000
Total	--	--	3,540	462,000
Year to date	--	--	4,780	605,000
Exports:				
2005	14,100,000	42,000,000	293,000	1,640,000
2006:				
January	4,620,000	5,840,000	33,100	1,650,000
February:				
Belgium	48,300	628,000	--	--
Canada	166,000	650,000	--	--
China	2,120	11,100	--	--
France	1,840	22,100	--	--
Germany	263	3,420	--	--
Hong Kong	211	2,750	--	--
Japan	73,200	837,000	--	--
Korea, Republic of	698	4,370	--	--
Mexico	322,000	1,010,000	--	--
Spain	243	3,160	--	--
Thailand	47,200	220,000	--	--
United Kingdom	5,980	28,600	18,000	699,000
Total	668,000	3,420,000	18,000	699,000
Year to date	5,290,000	9,260,000	51,100	2,350,000

-- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 4
U.S. IMPORTS AND EXPORTS OF FERROVANADIUM, VANADIUM PENTOXIDE (ANHYDRIDE) AND
OTHER OXIDES AND HYDROXIDES OF VANADIUM¹

(Kilograms, contained vanadium)

	Ferrovanadium		Vanadium pentoxide (anhydride) ²		Other oxides and hydroxides of vanadium	
	Quantity	Value	Quantity	Value	Quantity	Value
Imports for consumption:						
2005	12,000,000	\$131,000,000	1,410,000	\$52,900,000	213,000	\$6,540,000
2006:						
January	181,000	8,820,000	78,600	3,030,000	6,940	440,000
February:						
Austria	32,300	1,320,000	--	--	--	--
Canada	41,000	2,200,000	--	--	--	--
China	--	--	17,000	565,000	--	--
Czech Republic	97,200	4,240,000	--	--	--	--
Germany	--	--	150	7,730	--	--
Hong Kong	--	--	995	25,700	--	--
South Africa	--	--	10,300	447,000	--	--
Total	171,000	7,750,000	28,400	1,050,000	--	--
Year to date	351,000	16,600,000	107,000	4,080,000	6,940	440,000
Exports:						
2005	500,000	19,100,000	247,000	5,340,000	822,000	14,500,000
2006:						
January	12,400	443,000	38,900	827,000	76,300	1,010,000
February:						
Australia	348	16,000	--	--	--	--
Canada	21,500	450,000	--	--	28,400	253,000
Germany	--	--	--	--	60,800	541,000
Mexico	20,400	537,000	855	44,100	--	--
Netherlands	12,200	504,000	--	--	--	--
Total	54,400	1,510,000	855	44,100	89,200	794,000
Year to date	66,800	1,950,000	39,800	871,000	165,000	1,800,000

-- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²May include catalysts containing vanadium pentoxide.

Source: U.S. Census Bureau.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF VANADIUM-BEARING ASH, SLAG¹

(Kilograms, contained vanadium pentoxide)

	Ash and residues		Ash and residues (not from the manufacture of iron and steel)	
	Quantity	Value	Quantity	Value
2005	4,360,000	\$9,820,000	6,850,000	\$1,100,000
2006:				
January	19,000	252,000	157,000	148,000
February:				
Canada	--	--	85,100	88,300
Mexico	86,400	930,000	--	--
Total	86,400	930,000	85,100	88,300
Year to date	105,000	1,180,000	243,000	236,000

-- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF MISCELLANEOUS VANADIUM CHEMICALS¹

(Kilograms, contained vanadium)

	Sulfates		Vanadates	
	Quantity	Value	Quantity	Value
2005	35,000	\$77,000	91,700	\$2,800,000
2006:				
January	--	--	17,600	365,000
February:				
Japan	--	--	44	7,730
South Africa	--	--	15,100	539,000
Total	--	--	15,100	547,000
Year to date	--	--	32,700	912,000

-- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.